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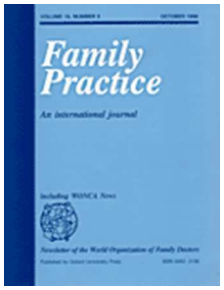

Clinical Characteristics of Persistent Frequent Attenders in Primary Care: Case Control Study

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Clinical Characteristics of Persistent Frequent Attenders in Primary Care: Case Control Study

Running title: primary care persistent frequent attenders

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2997 words

Abstract

Background: Most frequent attendance in primary care is temporary, but persistent frequent attendance is expensive and may be suitable for psychological intervention. To plan appropriate intervention and service delivery, there is a need for research involving standardised psychiatric interviews with assessment of physical health and health status.

Objective: To compare the mental and physical health characteristics and health status of persistent frequent attenders (FAs) in primary care, currently and over the preceding two years, with normal attenders (NAs) matched by age, gender and general practice.

Methods: Case control study of 71 FAs (30 or more general practitioner or practice nurse consultations in two years) and 71 NAs, drawn from five primary care practices, employing standardised psychiatric interview, quality of life, health anxiety and primary care electronic record review over the preceding two years.

Results: Compared to NAs, FAs were more likely to report a lower quality of life ($p<0.001$), be unmarried ($p=0.03$), and have no educational qualifications ($p=0.009$) but did not differ in employment status. FAs experienced greater health anxiety ($p<0.001$), morbid obesity ($p=0.02$), pain ($p<0.001$), and long-term pathological and ill-defined physical conditions ($p<0.001$). FAs had more depression, anxiety, and somatoform disorders of many different types (all $p<0.001$).

Conclusions: Persistent frequent attendance in primary care was associated with poor quality of life and high clinical complexity characterised by diverse physical and mental multimorbidity . Psychological interventions will require skilled therapists able to manage such complexity, in close liaison with general practitioners.

Abstract 241 words

Key words: frequent attendance, primary care, health anxiety, medically unexplained symptoms, quality of life.

Introduction

Frequent attenders (top decile of face to face attendance) account for 38 per cent of all primary care attendance, generating a high proportion of total cost and workload, and increased prescriptions and secondary care attendance compared to other attenders in primary care. [1-3]. In the United Kingdom, unlike long-term conditions that are typically managed by a multi-disciplinary team of general practitioners (GPs),nurses, and other professionals, the management of persistent frequent attenders in primary care (FAs) has largely been the responsibility of GPs with little assistance from others, in particular, mental health professionals. [4]

Initiatives such as Improving Access to Psychological Therapies (IAPT) in England are being extended to offer psychological treatment to manage patients with both long-term physical and mental health problems to address these issues in primary care. [5] However, recent prospective research in Europe shows only one in seven frequently attending patients continue to attend primary care so frequently over the next two years. [6,7] Therefore psychological interventions might be best focussed on *persistent* frequent attenders (FAs) in primary care.

Although there are a number of record-based and questionnaire studies on FAs in primary care [e.g.6-10], there are no case control studies employing a full standardised psychiatric interview with a standardised assessment of long-term conditions and health status. Such data might guide service planning, for example, of relevant therapist expertise or commissioning of care more tailored to patient need. In this regard, identification of FAs in ways that can be realistically achieved in routine primary care, without being burdensome for practices may also be helpful. Using a method of case identification that could be easily replicated in service practice, this study aimed to compare the psychiatric, physical health and health status characteristics of FAs and normal attenders (NAs) in primary care.

Methods

Design

This matched case control study compared the clinical and sociodemographic characteristics of FAs with NA controls. Further reports will explore the costs of care, patient and GP experience, and the results of a psychological intervention development study for FAs in primary care.[11] Anticipating future implementation, the research team co-produced the study with primary care practice staff to find a practicable method of case identification that was not burdensome for routine NHS practice,

and which would not require additional research support to identify FAs. We piloted an approach in one practice (practice A) before extending the approach to four other practices.

Practice selection

Five practices across Nottinghamshire were purposively selected to obtain a wide variation in existing organisation of care and socio-demographic contexts (Table 1).

Practice A was selected because it prioritised access to care over continuity of GP care. It covered four sites in close proximity to a general hospital and served a deprived population.

Practice B was selected because it emphasised continuity of GP care, seeking to ensure patients saw the same GP on each occasion. It served a more affluent population and was purpose built on the site of a hospital.

Practice C had some university links, served an affluent population on two sites but was not close to a general hospital. It followed a policy of trying to meet patient preferences to see the GP of the patient's choice but suggested alternatives if appointments would be delayed.

Practice D prioritised same day access to a GP rather than continuity of care with the same doctor if that meant waiting longer. Direct access to mental health professionals and welfare advice with financial problems was available at the practice. It served a deprived population and was not close to a general hospital.

Practice E was similar to practice C organisationally but served an inner city ethnically diverse population in an area of high social deprivation.

Table 1 about here

Inclusion Criteria

Regular attenders: For data protection reasons, practice staff, rather than the research team, selected FAs from their practice lists. Initially we tried to recruit the top ten per cent of frequent attenders by age and gender as previously suggested [13] but the pilot practice found this too burdensome to operate. Therefore we established the consultation rate that was within the top ten per cent of all face to face contacts with GPs in a pilot phase in practice A and then applied that rate

in all five practices in the study. [11]. That rate was 15 face to face contacts with GPs per year so we set a cut-off of 30 or more face to face contacts with GP or practice nurse within the last two years.
Normal attenders: Up to 22 face to face contacts with GP or practice nurse over two years. This upper limit was based on a previous study of eight Nottinghamshire practices showing a median annual attendance of eight, interquartile range (IQR) (3-11) face to face consultations with GPs [14].
Both groups: Aged 18 years old or over; written informed consent to the study.

Exclusion criteria

Participants were excluded by GPs in the practice if they had a diagnosis of an acute life-threatening or catastrophically disabling physical illness e.g. cancer, stroke or an acute serious mental illness such as schizophrenia, bipolar disorder, anorexia nervosa or dementia because these patients would not be referred for psychological treatment for FA in routine clinical practice. However, participants who had any of these conditions for longer than two years and were in remission or stable were included. Contacts for routine healthcare checks with nursing staff such as blood sugar or blood pressure monitoring, urine checks for drug misuse, routine blood tests, dressing changes, or health promotion e.g. smoking cessation, weight control, vaccination were not included in the count of consultations nor were telephone contacts or contacts with staff other than GPs or practice nurses.

Recruitment of participants

Practices identified FA and NA patient groups from their practice lists by an electronic search using study inclusion and exclusion criteria. All potential FAs and NAs meeting the criteria were sent a letter from the practice which included a study invite letter addressed from the GP practice, a participant information sheet and consent to contact form. Written and oral informed consent was obtained at interview from both FAs and NAs . Case comparisons were made with NAs matched by practice, gender and age (within five years) from batches of NAs selected at random by the practices themselves until the required numbers of NAs from each practice were recruited.

Clinical characteristics

Baseline assessments consisted of four measures;

SCID: Structured Clinical Interview for DSM-IV diagnoses (SCID) [15]. The research version of a standardised psychiatric interview was used to determine whether participants met axis 1 DSM-IV psychiatric disorder [16] in the preceding two years. All interviews were conducted by the research team who were trained and supervised on administering the SCID by a psychiatrist. In addition to

DSM-IV criteria, the abridged criteria for somatisation disorder were applied [17] and an additional diagnosis of health anxiety disorder was created by replacing the criterion for specific disease conviction in the DSM-IV diagnosis of hypochondriasis with persistent worrying about acquiring a serious physical illness. Thus the criteria for health anxiety disorder together with hypochondriasis are broadly in line with DSM-V illness anxiety disorder. [18].

HAI: Health Anxiety Inventory Short Week Adapted [19] is a 14 item self-rated tool to measure health anxiety over the preceding week. A cut off score of 15 indicates people who would be accepted by IAPT in England for psychological treatment of health anxiety (18 indicates sever health anxiety). Avoidance scores are calculated by asking respondents to rate their likelihood of avoiding ten health situations, scores range from 0 (would not avoid it) to 8 (always avoid it). Reassurance seeking scores are calculated based on how often the individual seeks reassurances from a range of nine sources, scores ranging from never (0) to daily (8).

EQ-5D-3L: EuroQoL [20]) is a descriptive system for health-related quality of life. The measure is self-completed and defines health states using five dimensions (mobility, self-care, usual activities, pain/discomfort, anxiety/depression), each with three levels of severity (no problems, some or moderate problems, extreme problems). In addition respondents are asked to rate their health on a visual analogue scale (VAS) ranging from 0-100, where a score of 0 indicates their worst and a score of 100 indicates their best imaginable health state. Using a valuation from a nationally representative sample it is possible to attach preference weights to individuals' responses [21]. This enables the elicitation of a single index value on a scale anchored at 0 and 1, where 1 is 'full health' and 0 is a health state of equivalent value to being dead.

CSRI: Client Service Receipt Inventory [22] involves an interview with the participant to collect data on health service use in the preceding three months. Information is collated for primary and secondary care use and prescribed medication.

Physical Health: Details of long term conditions of all participants were obtained from electronic primary health care records using a published classification [23]). In addition body mass index (BMI) scores were extracted from medical records.

Statistical Analysis

Case and controls were compared using univariate analyses on Stata version 13 with statistical significance level set at $P < 0.05$. Paired t-tests were carried out to compare normally distributed data and Wilcoxon sign rank tests were conducted for skewed variables. McNemar's test was used to test for group differences in binary variables and symmetry tests were used to test for group differences in categorical variables. As the results of qualitative work in the wider study suggested reasons for regular attendance included policy, organisational and other clinical factors that were not measured quantitatively, we did not apply multivariate analysis to try to "explain" regular attendance. Instead we adopted a more descriptive approach using univariate statistics to describe the nature of the clinical characteristics of FAs, their health profile and quality of life in order to inform the planning of interventions.

Results

Figure 1 shows the flow of patients through the study. Recruitment became more efficient in the remaining practices after the pilot was conducted. The research team checked all data provided by practices and excluded 16 pairs of cases who had too few contacts to be FAs and too many to be NAs. Of the 472 FA who were approached to take part in the study, 71 were recruited with a median of 37, (interquartile range or IQR 32-45, range 30-90) face to face contacts with GP or nurse. GP practices approached 422 NA patients (four practices sent three invite letters for every FA recruited and the pilot practice sent out 10 invite letters for every FA recruited) to recruit 71 controls. The median number of face to face GP or nurse consultations for NAs was 7 (IQR 5-12, range 0-21). In each group there were 55 (77%) women. The mean ages for FAs and NAs respectively were 57 years (s.d. 19) (range 20-89) and 56 years (s.d. 18) (range 20-86).

Table 2 about here

Table 2 shows self-reported service use in the three months preceding the baseline interview and sociodemographic factors for FAs and NAs. FAs reported significantly higher rates of face to face consultations with the GP and more prescribed medication, particularly central nervous (59%), cardiovascular (41%) and gastro intestinal systems (37%) drugs according to British National Formulary categories. Thirty five (49%) FAs had visited the hospital at least once in the preceding three months compared to 27 (38%) NAs; these differences were not statistically significant. FAs were significantly less likely than NAs to be married and more likely to be without an educational qualification but slightly higher rates of unemployment and lower income were not statistically significant.

Table 3 about here

Table 3 shows that FAs had more SCID psychiatric disorders than NAs in the preceding two years. Although there were wide confidence intervals, FAs were 18 times more likely than NAs to have three or more psychiatric disorders in the preceding two years, four times more major depression, 28 times more dysthymia, 14 times more any anxiety disorder and 12 times more somatoform disorder.

Table 4 about here

In addition, Table 4 shows that FAs had significantly more health anxiety (including both reassurance seeking and avoidance) than NAs with a mean above the threshold for severe health anxiety, a higher body mass index with a mean at the obese level for adults (30), and more long-term conditions with a median of three for FAs and one for NAs. Table 4 lists the most frequent long-term physical conditions all of which were significantly more common in FAs than NAs, including physical health conditions with a well-defined pathophysiology e.g. hypertension, asthma and diabetes ; and ill-defined conditions e.g. such chronic pain requiring the prescription of four or more different analgesics and irritable bowel syndrome. Table 4 shows that FAs rated their health status substantially worse than NAs on the EQ-5D VAS, tended to report more problems in all dimensions of the EQ-5D and had a lower index score. For all dimensions except self-care, FAs were most likely to report having moderate problems, while NAs were most likely to report having no problems.

Discussion

Summary of main findings

Persistent frequent attenders, compared to age, gender and practice matched normal attenders, had a complex range of clinical problems, with more mental disorders, more long-term pathological (hypertension, asthma, diabetes) and more ill-defined long-term physical conditions, (painful conditions associated with the use of four or more analgesics, irritable bowel syndrome) in the last two years, with greater health anxiety, a higher body mass index and lower quality of life. On average FAs had three mental health conditions each and three long-term physical or ill-defined conditions in the last two years in contrast to NAs who had one long-term physical, mental or ill-defined condition.

Comparison with previous literature

The results confirm and extend previous medical record based studies indicating that FAs are more likely to have problems with anxiety, health anxiety, long-term and ill-defined physical conditions and body mass index above 30 than NAs; the previous literature indicates that FAs may also have more traumatic life events in the preceding three years and a history of physical abuse in women. [6,7,9,10,24] FAs' EQ-5D index values were considerably lower than population norms [25] but similar to other samples with long-term physical and ill-defined conditions such as chronic obstructive airways disease and irritable bowel syndrome [26].

Study strengths and limitations

This study has provided additional, in depth data, on the clinical characteristics of FAs compared to age and gender matched NAs from the same practice. The recruitment of 15% FA cases underlines the challenges of engaging this complex group of patients in research. A method to identify FAs that could be operationalised in routine care without further increasing workload for GPs and other practice staff has been used. The case control design allowed an unbiased comparison between FAs and NAs across practices with different approaches to the organisation of care and serving different populations. Therefore the results would be not only generalisable but could be easily replicated for both research and service needs within the United Kingdom. Nevertheless, even setting such simple cut-off criteria entails work for practice staff e.g. to establish whether patients were seen face to face by GPs or practice nurses rather than by telephone or for new problems rather than for routine healthcare checks. The structure of diverse practice medical recording and IT systems did not make this task simple and led to some errors, resulting in 16 matched cases having to be excluded because they did not meet the eligibility criteria for the study.

Previous research studies, with additional research infrastructure support, have used the proportionate method for defining the top decile of attenders at each practice with different cut-offs for male and female in young adulthood, middle and old age [13]. By not setting age and gender cut-offs, our sample might be biased to an older and more female sample, potentially increasing the prevalence of long-term physical conditions that become more common with age and the prevalence of some mental disorders more common in women, such as depression. However, the proportionate method may similarly increase the prevalence of other common problems seen in younger people such as substance misuse, possibly further increasing the diversity of health presentations among FAs.

We recognise the relatively modest sample size and cross-sectional study design may explain why differences in unemployment, income and secondary health contacts were not statistically significant, and the wide confidence intervals for mental health and other long-term conditions. A further potential limitation of this study is that recruitment took part in larger than average practices. There was a very low recruitment rate in the pilot practice (only 11%), but recruitment improved for the remaining four practices (24%) as practices became more able to identify appointments due to routine monitoring and health checks. Although only a low proportion of FAs and NAs responded to the study, there is enough similarity with anonymised record based studies involving other varied practice samples [6,7,9,10,24] to believe that our results are representative of FAs in general.

Implications for research and clinical practice

The study data have several implications for developing psychological interventions for FAs in primary care. The health status of FAs is comparable to people with long-term conditions who receive more structured care, often with specialist input. Care of FAs may justify additional interventions to help GPs to manage and improve care for FAs, and impact their complex co-morbidities, but further intervention development and evaluation in randomised controlled trials are required to test clinical and cost effectiveness. The clinical complexity of FAs with multiple and diverse physical and mental health problems suggests that psychological therapists will require a high level of expertise and need to regularly communicate with the GP to enhance the consistency and effectiveness of interventions. They will need to liaise with GPs about the complex interplay of different symptoms, medication side-effects and any ongoing investigations or referrals. The results also suggest a potential role for GPs in helping FAs to understand the complexity of their problems, which may require additional support for effective implementation.

Declaration:

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Ethical Approval

The study was approved by the Nottingham Multicentre Research ethics Committee and research governance approval was obtained from Nottingham City, Nottinghamshire and Bassetlaw Primary Care Trusts.

Conflict of interest

All authors report that they have no competing interests.

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Table1. Practice profiles

	Practice A	Practice B	Practice C	Practice D	Practice E
Registered patients	26,977	11,552	12,915	14,067	15,325
No of sites	4	1	2	1	1
GPs	14	7	14	8	6
Deprivation decile[a]	4	6	9	5	2

[a]Based on Index of Multiple Deprivation (IMD) (12): 10 represents least deprived.

Table 2: Socio-demographic characteristics of 71 persistent frequent attenders and 71 normal attenders in the preceding three months.

Variable	FA median (range) or n (%)	NA median (range) or n (%)	P value
Service use			
No of GP appointments	4 (0 -30)	1 (0 -6)	< 0.001[a]
No of medications	5 (0 – 18)	1 (0 -14)	< 0.001[a]
No of secondary care contacts	0 (0 – 10)	0 (0 – 6)	0.15[a]
No of emergency care contacts	0 (0 – 3)	0 (0 – 2)	0.17[a]
Marital status			
Married/partner	37 (52)	48(68)	0.03[b]
Single/divorced/widow	34 (48)	23 (32)	
Highest educational qualifications			
None	28 (39)	14 (20)	0.009[c]
Degree	7 (10)	16 (22)	
Other	36 (51)	41 (58)	
Occupational status			
Unemployed	11 (15)	7 (10)	0.36[c]
Employed	24 (34)	30 (42)	
Retired	29 (41)	33 (46)	
Carer	6 (8)	1 (1)	
Missing	1 (1)	0 (0)	
Monthly net Income			
£0-£500	15 (21)	9 (13)	0.10[c]
£500-£1000	14 (20)	25 (35)	
£1000+	23(32)	28 (39)	
Missing	19 (27)	9 (13)	

[a] Wilcoxon sign rank tests for service use

[b] McNemar's test for marital status

[c] Symmetry tests for highest educational qualifications, occupational status and monthly net income

Table 3: Two year prevalence of mental disorder in 71 persistent frequent attenders and 71 normal attenders.

SCID Criteria	FA n (%)	NA n (%)	Odds ratio (95% CI)	P value[a]
Mental disorder (SCID-DSM-IV): median (range)	2 (0-11)	0 (0-4)	N/A	<0.001
3 or more SCID diagnoses	38 (54)	4 (5)	18.0 (4.6-154.3)	<0.001
Major depressive episode	31 (44)	14 (20)	4.2 (1.7-12.4)	<0.001
Dysthymia	25 (35)	2 (3)	28.0 (4.6-1145.0)	<0.001
Any depression diagnosis	34 (48)	14 (20)	4.7 (1.9-13.8)	<0.001
Panic disorder	14 (20)	1 (2)	-----	<0.001
Social phobia	8 (11)	0	----	0.003
Specific phobia	9 (13)	1 (2)	8.0 (1.1-355.0)	0.02
Post-traumatic stress disorder	8 (11)	0	----	0.002
Generalised anxiety disorder	22 (31)	3 (4)	12.5 (3.1-108.9)	<0.001
Any anxiety diagnosis	34 (48)	8 (11)	14.0 (3.5- 121.3)	<0.001
Somatization disorder	10 (14)	2 (3)	9 (1.3-394.5)	0.011
Abridged somatisation disorder	27 (38)	2 (3)	13.5 (3.4-117.2)	<0.001
Hypochondriasis	10 (14)	0	----	<0.001
Health anxiety disorder	10 (14)	0	-----	<0.001
Any somatoform disorder	40 (56)	6 (8)	12.3 (3.9-62.5)	<0.001

[a] McNemar's test for all binary Structured Clinical Interview for DSM-IV (SCID) criteria variables

Note diagnoses are not mutually exclusive

Table 4: Health status, body mass index, long-term conditions and health anxiety in 71 persistent frequent attenders and 71 normal attenders.

Variable	FA	NA	P value	Odds ratio (95% CI)
EQ-5D – 3L				
Index Value :median (IQR)	0.66 (0.19-0.80)	1.00 (0.80- 1.00)	<0.001[a]	
Visual analogue scale (VAS) score :median (IQR)	50 (40 – 65)	85 (70-95)	<0.001[a]	
Dimensions[b]	L1 | L2 | L3	L1 | L2 | L3		
Mobility	30 | 41 | 0	56 | 15 | 0	<0.001[a]	
Self-care	51 | 20 | 0	69 | 1 | 1	<0.001[a]	
Usual activities	29 | 34 | 8	62 | 7 | 2	<0.001[a]	
Pain / discomfort	11 | 41 | 19	48 | 20 | 3	<0.001[a]	
Anxiety / depression	31 | 34 | 6	61 | 8 | 2	<0.001[a]	
HAI				
Score of items 1-14:Mean(95% CI)	18.5 (15.9-21.2)	6.6 (5.3-7.8)	<0.001[c]	
Reassurance seeking :Mean(95% CI)	25.0 (20.9- 29.1)	14.0 (10.5-1765)	<0.001[c]	
Avoidance :median (IQR)	6.0 (0 -17)	0 (0-4)	0.0024[a]	
BMI: median (IQR)	30.1 (25.7 -31.6)	26.2 (24.6 -28.8)	0.020[a]	
Long term conditions[d]: median (range)	3 (0 – 8)	1 (0 – 5)	<0.001[a]	
Hypertension[e], n(%)	29 (48)	14 (23)	0.002	4.8 (1.6-19.2)
Painful condition[e], n(%)	22 (37)	7 (12)	0.004	3.5 (1.4-10.6)
Asthma (currently treated)[e], n (%)	17 (28)	7 (12)	0.033	2.7 (1.0-8.3)
Irritable Bowel Syndrome[e], n (%)	16 (27)	7 (12)	0.020	4.0 (1.1-22.1)
Diabetes[e], n (%)	9 (15)	2 (3)	0.012	8.0 (1.1-355.0)

[a] Wilcoxon signed-rank tests for EQ5D dimensions, index value and Visual Analogue Scale (VAS), Health Anxiety Inventory (HAI) avoidance scores, Body Mass Index (BMI) and long term conditions

[b] Number of participants reporting level 1 (L1; no problems), level 2 (L2; some problems) and level 3 (L3; extreme problems) for each dimension

[c] Paired t tests for Health Anxiety Inventory item 1-14 scores and reassurance seeking scores

[d] Long term physical conditions from case records as defined by Barnett et al. 2012, n=60 in both FAs and NAs.

[e] Long-term conditions if found in 10 per cent or more participants in either group, McNemar's test for all binary long term conditions.

Figure 1. Flow of participants into study by practice